

REMARKS

Applicants have amended claims 1, 31, 39, and 41, and have cancelled claims 9 and 16-18 without prejudice. Applicants also have added new claim 44. Applicants acknowledge the Examiner's allowance of claims 23 and 25-26.

Claims 1, 3-8, and 10-44, of which claims 1, 23, 25-26, 31, 35, 39, 41, and 44 are independent in form, are pending in the application. Applicants address the Examiner's rejections below.

35 U.S.C. § 102(b)

U.S. 5,300,371 ("Tomantschger")

The Examiner has rejected claims 1, 3-6, 8, 16-22, and 37-40 as anticipated by U.S. 5,300,371 (Tomantschger) under 35 U.S.C. § 102(b).

The independent claims (1 and 39) have been amended to include the feature of claim 9: a cathode comprising greater than about 86% of a cathode active material by weight. Claim 9 was not rejected as anticipated by Tomantschger, and therefore, Tomantschger does not anticipate claims 1, 3-6, 8, 16-22, and 37-40.

U.S. 5,989,746 ("Bernard")

The Examiner has rejected claims 41-43 as anticipated by U.S. 5,989,746 (Bernard) under 35 U.S.C. § 102(b).

As amended, claim 41 recites a primary alkaline battery including a cathode comprising manganese dioxide. Bernard does not disclose or suggest a primary alkaline battery including a cathode comprising manganese dioxide. Rather, as acknowledged by the Examiner, Bernard discloses an electrode with a nickel hydroxide-based active material. (See, e.g., col. 2, lines 60-62). Thus, Bernard does not anticipate claims 41-43.

35 U.S.C. § 103

U.S. 5,300,371 (Tomantschger)

The Examiner has rejected claims 3-7, 9-12, 35-36, and 38 as unpatentable over US 5,300,371 (Tomantschger) under 35 U.S.C. § 103(a). The rejected claims all recite a primary alkaline battery including a cathode comprising greater than about 86% of a cathode active material by weight.

Applicants have discovered that, by including carbon fibers in a cathode, the amount of cathode active material in the cathode can be increased, thereby leading to a battery with a greater capacity than a battery without carbon fibers. Applicants explained this discovery in the summary section of their application:

[B]ecause of their enhanced conductivity and fibrous morphology, less carbon fibers are needed in the cathode in order to provide the cathode with sufficient conductivity for effective battery performance. Consequently, more cathode active material can be added to the cathode, thereby increasing the capacity and high power performance of the battery. (Application, p. 1).

This discovery is not recognized in Tomantschger.

Thus, while claims 3-7, 9-12, 35-36, and 38 recite a cathode comprising greater than about 86% of a cathode active material by weight, Tomantschger discloses, for example, cathodes having 84.11% MnO₂ (Example 1), 79.01% MnO₂ (Example 2), and 83.03% MnO₂ (Example 3). Tomantschger does not suggest increasing the amount of cathode active material in the cathode. Without knowing about Applicants' discovery that adding carbon fibers to a cathode allows for an increase in the cathode active material, a person of skill in the art would not be motivated by Tomantschger to increase the weight percent of cathode active material to greater than 86% by weight. Thus, Tomantschger does not render claims 3-7, 9-12, 35-36, and 38 unpatentable.

U.S. 5,300,371 (Tomantschger) and U.S. 5,110,693 ("Friend")

The Examiner has rejected claims 13-15, 24, 27, and 30-34 as unpatentable over U.S. 5,300,371 (Tomantschger) in view of U.S. 5,110,693 ("Friend").

Claims 13-15, 24, 27, and 30 all depend from claim 1, which recites a primary alkaline battery including a cathode comprising greater than about 86% of a cathode active material by weight. Neither Tomantschger nor Friend discloses or suggests a battery with the claimed

weight percent of a cathode active material. Thus, claims 13-15, 24, 27, and 30 are not rendered unpatentable by the combination of Tomantschger and Friend.

Amended claim 31 recites a primary battery including a cathode comprising at least about 86% of manganese dioxide by weight. Neither Tomantschger nor Friend suggests a battery with the claimed weight percent of manganese dioxide. Thus, claims 31-34 are not rendered unpatentable by the combination of Tomantschger and Friend.

U.S. 5,300,371 (Tomantschger) and U.S. 5,041,199 ("Di Franco")

The Examiner has rejected claims 28 and 29 under 35 U.S.C. § 103(a) as unpatentable over US 5,300,371 (Tomantschger) in view of US 5,041,199 (Di Franco).

Di Franco does not cure the deficiencies of Tomantschger; for example, Di Franco does not disclose or suggest a primary alkaline battery including a cathode comprising greater than about 86% of a cathode active material by weight. Therefore, claims 28 and 29, which depend from claim 1, are patentable over Tomantschger in view of Di Franco for at least the reasons provided above.

New Claim

As noted above, Applicants have added new claim 44, which is patentable for at least the same reasons that claim 1 is patentable.

Applicants believe the claims are in condition for allowance, which action is requested.